

Application/Control Number : 09/492,755
Art Unit: 1722
October 23, 2003
Page 2

Claim Amendments:

Rewrite claims 1, 6, 11, 12, 14, 15, and 16 as follows:

1. (currently amended) A device for manufacturing items made of plastic material, with molding units arranged on a structure of carousel which rotates about a first vertical axis, the device including an upper male mold part and a lower female mold part which are aligned along a second vertical axis, parallel to said first vertical axis of the carousel, said male mold part comprising: a cylindrical jacket which is rigidly coupled to the structure of the rotating carousel coaxial to a sliding axis of the female mold part; a sleeve which is guided on said jacket; and a forming punch which is guided in said jacket and comprises a tubular stem, said tubular stem having a lower portion forming a chamber, said lower portion being constituted by a plate fixed to said stem and having a thickness and an outer surface which is shaped so as to produce internal molding of a molded item, said plate including a series of radial holes which are formed radially in the thickness of said plate, and ports provided at said outer surface and connected to said radial holes, said radial holes and said ports being supplied with compressed air; a tube accommodated inside said stem, said tube forming, together with said stem, a cylindrical interspace which is connected to said chamber; a slender tube arranged internally along said tube and connected hermetically to said plate in communication with said radial holes and said ports, said slender tube forming, together with said tube, a tubular channel, said tubular channel being connected to said chamber; and coolant fluid delivery and return couplings, said cylindrical interspace and said tubular channel being connected to said coolant fluid delivery and return couplings, and said slender tube being supplied with, and further conveying compressed air through said radial holes and said ports between said outer surface and the molded item, so as to cause the separation of said item from said lower portion of said tubular stem.

2. (previously presented) The device of claim 1, wherein said plate is centered at a flared region of said stem and is provided with a tubular tang which is

Application/Control Number : 09/492,755
Art Unit: 1722
October 23, 2003
Page 3

screwed into said stem so as to form said chamber, and wherein lower ends of said tube and of said slender tube are inserted hermetically in said tang so as to close said cylindrical interspace and said tubular channel, said cylindrical interspace and said tubular channel being connected to said chamber through openings provided at said tang.

3. (previously presented) The device of claim 2, comprising: a body coupled to an upper end of said stem, upper ends of said tube and of said slender tube being inserted hermetically in said body; and holes being formed in said body in order to connect said cylindrical interspace and said tubular channel to said coolant fluid delivery and return couplings and to allow supplying of compressed air to said slender tube.

4. (original) The device of claim 3, further comprising an element which is fixed to a top part of said stem, said element being provided with couplings for connection to said holes, and accommodating said body which has a cylindrical form.

5. (original) The device of claim 4, comprising elastic means, which are interposed between said element and the structure of the carousel for returning said stem into a position in which said punch rests against a shoulder of said jacket.

6. (currently amended) A device for manufacturing caps of plastic material for closing containers, with molding units arranged on a structure of carousel which rotates about a first vertical axis, the device including an upper male mold part and a lower female mold part which are aligned along a second vertical axis, parallel to said first vertical axis of the carousel, said male mold part comprising: a cylindrical jacket which is rigidly coupled to the structure of the rotating carousel coaxial to a sliding axis of the female mold part; a sleeve which is guided on said jacket; and a forming punch which is guided in said jacket and comprises a tubular stem, said

Application/Control Number : 09/492,755
Art Unit: 1722
October 23, 2003
Page 4

tubular stem having a lower portion forming a chamber, said lower portion being constituted by a plate fixed to said stem and having a thickness and an outer surface which is shaped so as to produce internal molding of a molded item, said plate including a series of radial holes which are formed radially in the thickness of said plate, and ports provided at said outer surface and connected to said radial holes, said radial holes and said ports being supplied with compressed air; a tube accommodated inside said stem, said tube forming, together with said stem, a cylindrical interspace which is connected to said chamber; a slender tube arranged internally along said tube and connected hermetically to said plate in communication with said radial holes and said ports, said slender tube forming, together with said tube, a tubular channel, said tubular channel being connected to said chamber; and coolant fluid delivery and return couplings, said cylindrical interspace and said tubular channel being connected to said coolant fluid delivery and return couplings, and said slender tube being supplied with, and further conveying compressed air through said radial holes and said ports between said outer surface and the molded item, so as to cause the separation of said item from said lower portion of said tubular stem.

7. (previously presented) The device of claim 6 wherein said plate is centered at a flared region of said stem and is provided with a tubular tang which is screwed into said stem so as to form said chamber, and wherein lower ends of said tube and of said slender tube are inserted hermetically in said tang so as to close said cylindrical interspace and said tubular channel, said cylindrical interspace and said tubular channel being connected to said chamber through openings provided at said tang.

8. (original) The device of claim 7, comprising: a body coupled to an upper end of said stem, upper ends of said tube and of said slender tube being inserted hermetically in said body; and holes being formed in said body in order to connect said cylindrical interspace and said tubular channel to said coolant fluid delivery and return

Application/Control Number : 09/492,755
Art Unit: 1722
October 23, 2003
Page 5

couplings and to allow supplying of compressed air to said slender tube.

9. (original) The device of claim 8, comprising an element which is fixed to a top part of said stem, said element being provided with couplings for connection to said holes, and accommodating said body which has a cylindrical form.

10. (original) The device of claim 9, comprising elastic means, which are interposed between said element and the structure of the carousel for returning said stem into a position in which said punch rests against a shoulder of said jacket.

11. (currently amended) A device for manufacturing items made of plastic material, with molding units arranged on a structure of carousel which rotates about a first vertical axis, the device including an upper male mold part and a lower female mold part which are aligned along a second vertical axis, parallel to said first vertical axis of the carousel, said male mold part comprising: a cylindrical jacket which is rigidly coupled to the structure of the rotating carousel coaxial to a sliding axis of the female mold part; a sleeve which is guided on said jacket; and a forming punch which is guided in said jacket and comprises a tubular stem, said tubular stem having a lower portion forming a chamber, said lower portion further including a plate fixed to said stem and having a thickness and an outer surface which is shaped so as to produce internal molding of a molded item, said plate including a series of radial holes which are formed radially in the thickness of said plate, and ports provided at said outer surface and connected to said radial holes, said radial holes and said ports being supplied with compressed air; a tube accommodated inside said stem, said tube forming, together with said stem, a cylindrical interspace which is connected to said chamber; a slender tube arranged internally along said tube and forming, together with said tube, a tubular channel, said tubular channel being connected to said chamber; and coolant fluid delivery and return couplings, said cylindrical interspace and said tubular channel being connected to said coolant fluid delivery and return couplings, and said slender tube being supplied with, and further

Application/Control Number : 09/492,755
Art Unit: 1722
October 23, 2003
Page 6

conveying compressed air through said radial holes and said ports between said outer surface and the molded item, so as to cause the separation of said item from said lower portion of said tubular stem, wherein said lower portion is constituted by a plate which is centered at a flared region of said stem, said plate being provided with a tubular tang which is screwed into said stem so as to form said chamber, and wherein lower ends of said tube and of said slender tube are inserted hermetically in said tang so as to close said cylindrical interspace and said tubular channel, said cylindrical interspace and said tubular channel being connected to said chamber through openings provided at said tang, a body coupled to an upper end of said stem, upper ends of said tube and of said slender tube being inserted hermetically in said body; and holes being formed in said body in order to connect said cylindrical interspace and said tubular channel to said coolant fluid delivery and return couplings and to allow supplying of compressed air to said slender tube, an element which is fixed to a top part of said stem, said element being provided with couplings for connection to said holes, and accommodating said body which has a cylindrical form, comprising elastic means, which are interposed between said element and the structure of the carousel for returning said stem into a position in which said punch rests against a shoulder of said jacket.

12. (currently amended) A device for manufacturing caps of plastic material for closing materials with molding units arranged on a structure of carousel which rotates about a first vertical axis, the device including an upper male mold part and a lower female mold part which are aligned along a second vertical axis, parallel to said first vertical axis of the carousel, said male mold part comprising: a cylindrical jacket which is rigidly coupled to the structure of the rotating carousel coaxial to a sliding axis of the female mold part; a sleeve which is guided on said jacket; and a forming punch which is guided in said jacket and comprises a tubular stem, said tubular stem having a lower portion forming a chamber, said lower portion further including a plate fixed to said stem and having a thickness and an outer surface which is shaped so as to produce internal molding of a molded item, said plate

Application/Control Number : 09/492,755
Art Unit: 1722
October 23, 2003
Page 7

including a series of radial holes which are formed radially in the thickness of said plate, and ports provided at said outer surface and connected to said radial holes, said radial holes and said ports being supplied with compressed air; a tube accommodated inside said stem, said tube forming, together with said stem, a cylindrical interspace which is connected to said chamber; a slender tube arranged internally along said tube and forming, together with said tube, a tubular channel, said tubular channel being connected to said chamber; and coolant fluid delivery and return couplings, said cylindrical interspace and said tubular channel being connected to said coolant fluid delivery and return couplings, and said slender tube being supplied with, and further conveying compressed air through said radial holes and said ports between said outer surface and the molded item, so as to cause the separation of said item from said lower portion of said tubular stem, wherein said ~~lower portion is constituted by a plate which~~ is centered at a flared region of said stem, said plate being provided with a tubular tang which is screwed into said stem so as to form said chamber, and wherein lower ends of said tube and of said slender tube are inserted hermetically in said tang so as to close said cylindrical interspace and said tubular channel, said cylindrical interspace and said tubular channel being connected to said chamber through openings provided at said tang, a body coupled to an upper end of said stem, upper ends of said tube and of said slender tube being inserted hermetically in said body; and holes being formed in said body in order to connect said cylindrical interspace and said tubular channel to said coolant fluid delivery and return couplings and to allow supplying of compressed air to said slender tube, an element which is fixed to a top part of said stem, said element being provided with couplings for connection to said holes, and accommodating said body which has a cylindrical form, elastic means, which are interposed between said element and the structure of the carousel for returning said stem into a position in which said punch rests against a shoulder of said jacket.

13. (cancelled)

Application/Control Number : 09/492,755
Art Unit: 1722
October 23, 2003
Page 8

14. (currently amended) A device according to claim 16 wherein said forming punch comprises a bell-shaped portion, said plate being centered to said bell-shaped portion and having a tubular tang centrally projecting therefrom and coupled to said tubular stem so as to define said chamber, ~~a plurality of radial holes radially formed in said plate and opened onto the outside of said punch,~~ a bush hermetically inserted in said tang and connected a lower end of said slender tube to said radial holes, a recess formed in said body, a cylinder accommodated in said recess coaxially to said slender tube and provided with respective holes communicating with said compressed air supply, said upper end of said slender tube being hermetically inserted in said cylinder and connected to said compressed air supply through said respective holes.

15. (currently amended) The device according to claim 16, further comprising elastic means which are interposed between said cylindrical element and a structure of said carousel and are suitable to return said ~~tubular~~ tubular stem into a position in which said forming punch rests against a shoulder of said jacket.

16. (currently amended) A device for manufacturing plastic caps for closing containers, by means of molding units arranged on a carousel having a structure rotating about a vertical axis and comprising an upper male mold part and a lower female mold part which are aligned along a second vertical axis which is parallel to the rotation axis of the carousel, said upper male mold part comprising: a cylindrical jacket rigidly coupled to the structure of the rotating carousel, coaxial to the sliding axis of said lower female mold part; a sleeve which is guided on said jacket; a forming punch with an outer forming surface, said forming punch being guided in said jacket and comprising a tubular stem having an upper portion and a lower portion, said lower portion enclosing a chamber and having an outer surface formed by a plate fixed to said stem, said plate having a thickness and being shaped so as to produce the internal molding of said item and being provided with a series of radial holes which are formed radially in the thickness of said plate and ports connected to said radial holes and opening at said lower surface and connected to a

Application/Control Number : 09/492,755
Art Unit: 1722
October 23, 2003
Page 9

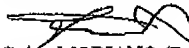
compressed air supply, said tubular stem internally accommodating a tube which forms, together with said tubular stem, a cylindrical interspace which is connected to said chamber; a cylindrical element fixed to said upper portion of said tubular stem and having a seat coaxial to said tubular stem; a body accommodated in said seat and coupled to said upper portion of said tubular stem; a slender tube arranged internally along said tube and hermetically coupled to said plate in fluid communication with said radial holes and said ports and forming, together with said tube, a tubular channel which is connected to said chamber, said slender tube and said tube each having an upper end hermetically inserted in said body; holes formed in said body and in said cylindrical element for connecting said cylindrical interspace and said tubular channel to a delivery and a return of a coolant fluid and for connecting said slender tube to said compressed air supply so as to convey compressed air through said radial holes and said ports between the outer forming surface of said forming punch and the manufactured item, so as to cause the separation of said item from said portion.

23.OCT.2003 15:06

NO. 9295 P. 10

Application/Control Number : 09/492,755
Art Unit: 1722
October 23, 2003
Page 10

Respectfully submitted,



Guido MODIANO (Reg. No. 19,928)
Agent for the Applicant

Date: October 23, 2003
Address: Via Meravigli 16, 20123 MILAN-ITALY
Telephone: (from USA) (011)(39)(02)8590-7777
Telefax: (from USA)(011)(39)(02)863-860

RECEIVED
CENTRAL FAX CENTER
OCT 23 2003

OFFICIAL